



# Grain Transportation Report

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[www.ams.usda.gov/tmdtsb/grain](http://www.ams.usda.gov/tmdtsb/grain)

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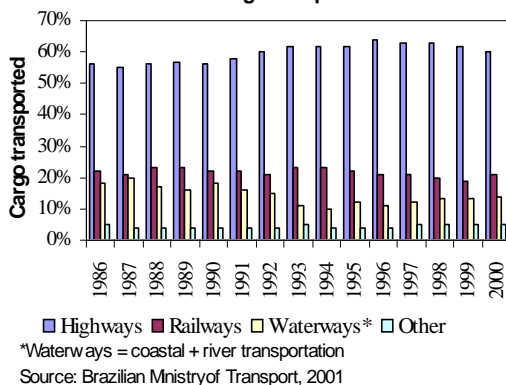
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The next  
release is  
May 19, '05



**Brazilian Export Soybean Transport Indicator:** Brazil, a major U.S. competitor in world grain markets, is the world's second largest soybean producer and exporter, after the United States. Soybean movements throughout Brazil depend on truck transportation. Trucks account for approximately

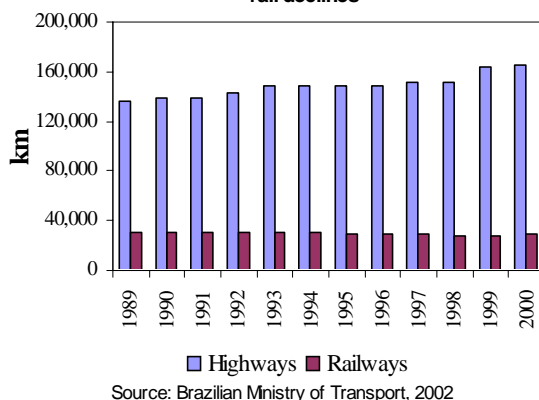
**Figure 1— Highways accounted for 60 percent of total Brazilian cargo transported in 2000**



60 percent of the general cargo transportation in Brazil while rail and barge account for 20 and 15 percent, respectively (see figure 1). Brazilian highways cover more than five times the distance covered by Brazilian railways. As shown in figure 2, the trend has been to build new roads while rail kilometers have declined slightly.

Roads in Brazil vary in quality from freeways to dirt. Several states have privatized and improved major roads. New roads have high tolls and truckers often avoid them by using alternative routes (USDA, FAS, GAIN Report # BR3003). Grain is shipped predominantly by trucks with a capacity of 89,600 lb (40 metric tons). The truck freight market is not under government control; hence, freight prices are determined by supply and demand for the transport service. To negotiate efficiently, carriers and shippers must be aware of current shipping cost variables.

**Figure 2—Brazil highway kilometers increase while rail declines**



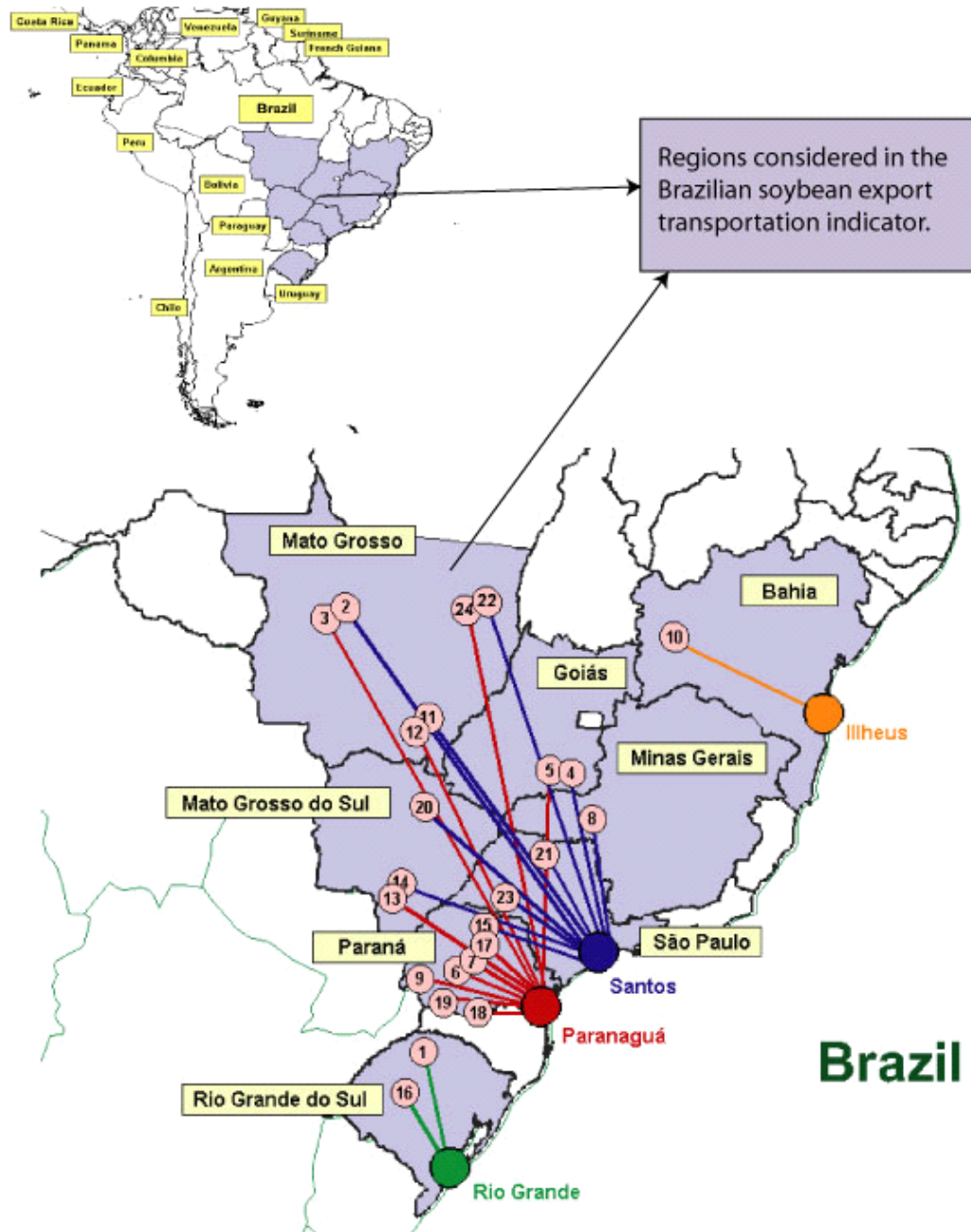
Inland waterways are considered to be the most economical means of moving bulk commodities. Consequently, Brazil has high expectations for projects such as the Madeira waterway system. It is anticipated that this waterway system will efficiently reduce transportation costs for grains produced in Brazil's Center West region.

To illustrate the behavior of the freight market in Brazil, the Brazilian Export Soybean Transportation Indicator, a quarterly publication, was designed. The indicator shows the cost of shipping soybeans from major production regions in Brazil to the ports

and then to the European Union (EU), Brazil's major soybean export market. Origins considered in the Indicators comprise 18 regions in 8 states, which represent 84 percent of the total 2003 Brazilian soybean production (see figure 15 inside the report). These are the latest official statistical data available, following the classification used by the Brazilian Institute of Geography and Statistics – IBGE. Analysis of origins and destinations resulted in 24 routes, as shown in Figure 15 and Table 18. The exchange rate used was: 1 U.S.\$=2.6651 Reais. The first results obtained for the Indicator are illustrated in Table 19 and Figures 16 and 17. Truck freight rates correspond to actual values negotiated between shippers and carriers, including toll fees, but excluding insurance and taxes. The ports of Santos and Paranaguá are the preferred embarkation points, but the ports of Itaqui, Vitória, Ilhéus, São Francisco do Sul and Rio Grande can be considered good alternatives. For this report, the ports of Santos, Paranaguá, and Rio Grande, were selected as the major export originating points for shipments to the EU. Actual ocean freight rates were weighted by volume (Sistema de Informações de Fretes, SIFRECA, ESALQ – USP). [jvcaixet@esalq.usp.br](mailto:jvcaixet@esalq.usp.br); [Delmy.Salin@USDA.gov](mailto:Delmy.Salin@USDA.gov)

# Brazil Transportation

Figure 15  
Routes and Regions considered in the Brazilian soybean export transportation indicator<sup>1</sup>



<sup>1</sup> Regions comprised 84 percent of Brazilian soybean production, 2003  
Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

**Table 18--Truck rates for selected Brazilian soybean export transportation routes, 1st quarter 2005**

Route #	Origin <sup>1</sup> (reference city)	Destination	Distance (miles) <sup>2</sup>	Weight(%) <sup>3</sup>	Freight price (per 100 miles) <sup>4</sup>
1	Northwest RS <sup>5</sup> (Cruz Alta)	Rio Grande	288	16.6	4.46
2	North MT(Sorriso)	Santos	1190	10.1	5.86
3	North MT(Sorriso)	Paranaguá	1262	9.5	5.54
4	South GO(Rio Verde)	Santos	587	7.0	4.40
5	South GO(Rio Verde)	Paranaguá	726	5.6	3.79
6	North Center PR(Londrina)	Paranaguá	268	4.4	7.19
7	Western Center PR(Mamborê)	Paranaguá	311	3.9	5.22
8	Triangle MG(Uberaba)	Santos	339	3.8	7.28
9	West PR(Assis Chateaubriand)	Paranaguá	377	3.7	5.83
10	West Extreme BA(São Desidério)	Ilhéus	544	3.6	6.53
11	Southeast MT(Primavera do Leste)	Santos	901	3.6	6.18
12	Southeast MT(Primavera do Leste)	Paranaguá	975	3.3	6.22
13	Southwest MS(Maracaju)	Paranaguá	612	3.1	5.78
14	Southwest MS(Maracaju)	Santos	652	2.9	5.84
15	West PR(Assis Chateaubriand)	Santos	550	2.5	6.18
16	Western Center RS(Tupanciretã)	Rio Grande	273	2.4	5.03
17	Southwest PR(Chopinzinho)	Paranaguá	291	2.3	6.00
18	Eastern Center PR(Castro)	Paranaguá	130	2.3	10.20
19	South Center PR(Guarapuava)	Paranaguá	204	2.1	8.39
20	North Center MS(São Gabriel do Oeste)	Santos	720	2.0	5.39
21	Ribeirão Preto SP(Guairá)	Santos	314	1.5	6.38
22	Northeast MT(Canarana)	Santos	950	1.4	6.66
23	Assis SP(Palmital)	Santos	285	1.2	6.16
24	Northeast MT(Canarana)	Paranaguá	1075	1.2	5.90
<b>Average</b>			<b>626</b>	<b>100</b>	<b>5.67</b>

<sup>1</sup>Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price

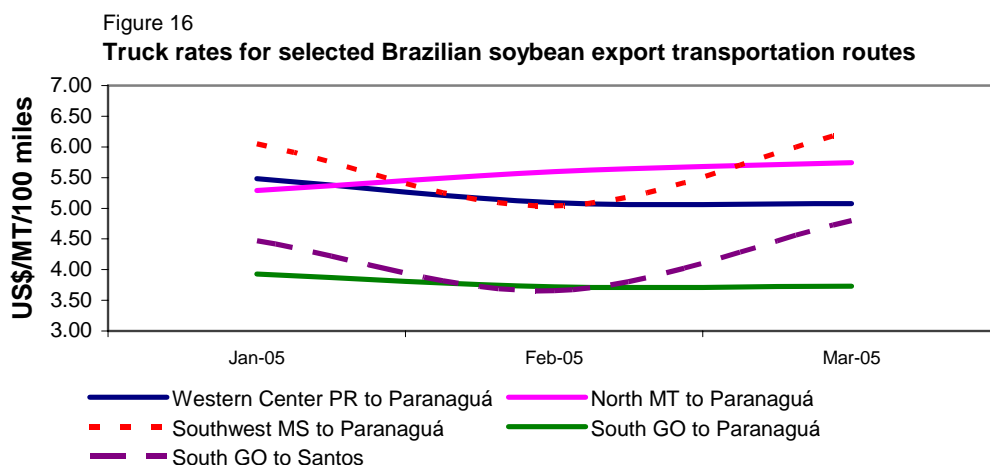
<sup>2</sup>Distance from the main city of the considered region to the mentioned ports

<sup>3</sup>The weight is directly proportional to the amount of production in each region

<sup>4</sup>US\$ per metric ton (average monthly exchange rate from "Banco Central do Brasil" was used to convert Brazilian reais to the U.S. dollar)

<sup>5</sup>RS = Rio Grande Do Sul, MT= Mato Grosso, GO = Goiás, PR = Paraná, MG = Minas Gerais, BA = Bahia, MS = Mato Grosso Do Sul, SP = São Paulo

Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS



**Table 19--Monthly Brazilian soybean export truck transportation cost index**

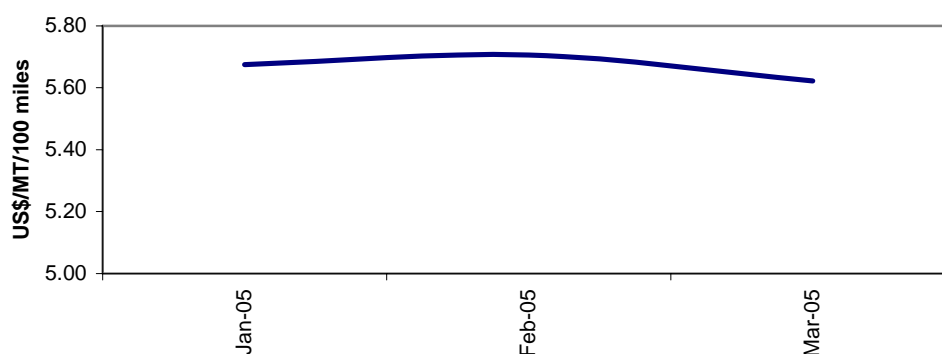
Month	Freight price* (per 100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan. 05 = 100)
Jan. 05	5.67		100.00
Feb. 05	5.71	0.5	100.54
Mar. 05	5.62	-1.5	99.08

\*weighted average and quoted in US\$ per metric ton

Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Figure 17

**Brazilian soybean export truck transportation weighted average prices, 2005**



Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

**Table 20--Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Hamburg, Germany (US\$/metric ton)\***

Ports	2005 1st qtr
Santos	\$45.53
Paranagua	\$44.64
Rio Grande	\$44.20

\*correspond to the average actual values negotiated between shippers and carriers and weighted according to the magnitude of the shipped volumes

Source: Sistema de Informações de Fretes, SIFRECA, ESALQ/USP (University of São Paulo, Brazil)